

**PATENT COOPERATION TREATY**  
**PCT**  
**INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY**  
(Chapter II of the Patent Cooperation Treaty)  
(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 17724 KU/IB	<b>FOR FURTHER ACTION</b> <small>See Form PCT/IPEA/416</small>	
International application No. PCT/IB2005/000252	International filing date ( <i>day/month/year</i> ) 20.01.2005	Priority date ( <i>day/month/year</i> ) 21.01.2004
International Patent Classification (IPC) or national classification and IPC INV. C02F3/30		
Applicant KISHI, Hiroshi		
<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 5 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input type="checkbox"/> <i>(sent to the applicant and to the International Bureau)</i> a total of sheets, as follows:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</li> <li><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</li> </ul> <p>b. <input type="checkbox"/> <i>(sent to the International Bureau only)</i> a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in electronic form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p> <p>4. This report contains indications relating to the following items:</p> <ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Box No. I Basis of the report</li> <li><input type="checkbox"/> Box No. II Priority</li> <li><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</li> <li><input type="checkbox"/> Box No. IV Lack of unity of invention</li> <li><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</li> <li><input type="checkbox"/> Box No. VI Certain documents cited</li> <li><input type="checkbox"/> Box No. VII Certain defects in the international application</li> <li><input type="checkbox"/> Box No. VIII Certain observations on the international application</li> </ul>		
Date of submission of the demand 03.11.2005	Date of completion of this report 01.06.2006	
Name and mailing address of the international preliminary examining authority:   European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 eprmu d Fax: +49 89 2399 - 4465	Authorized officer  Serra, R Telephone No. +49 89 2399-5976	



**INTERNATIONAL PRELIMINARY REPORT  
ON PATENTABILITY**

International application No.  
PCT/IB2005/000252

**Box No. I Basis of the report**

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
  - This report is based on translations from the original language into the following language, which is the language of a translation furnished for the purposes of:
    - international search (under Rules 12.3 and 23.1(b))
    - publication of the international application (under Rule 12.4)
    - international preliminary examination (under Rules 55.2 and/or 55.3)
2. With regard to the **elements\*** of the international application, this report is based on (*replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report*):

**Description, Pages**

1-50                          as originally filed

**Claims, Numbers**

1-23                          as originally filed

**Drawings, Sheets**

1/8-8/8                      as originally filed

- a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing

3.  The amendments have resulted in the cancellation of:
  - the description, pages
  - the claims, Nos.
  - the drawings, sheets/figs
  - the sequence listing (*specify*):
  - any table(s) related to sequence listing (*specify*):
4.  This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
  - the description, pages
  - the claims, Nos.
  - the drawings, sheets/figs
  - the sequence listing (*specify*):
  - any table(s) related to sequence listing (*specify*):

\* If item 4 applies, some or all of these sheets may be marked "superseded."

**INTERNATIONAL PRELIMINARY REPORT  
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**Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

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1. Statement

Novelty (N)	Yes:	Claims 3-19
	No:	Claims 1, 2, 20-23
Inventive step (IS)	Yes:	Claims 3-6
	No:	Claims 1, 2, 7-23
Industrial applicability (IA)	Yes:	Claims 1-23
	No:	Claims

2. Citations and explanations (Rule 70.7):

**see separate sheet**

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**INTERNATIONAL PRELIMINARY  
REPORT ON PATENTABILITY  
(SEPARATE SHEET)**

International application No.

PCT/IB2005/000252

AP20 Receipt Date 20 JUL 2006

**Re Item V.**

- 1 Reference is made to the following document:

D1 : FR 2 814 453 A (AIR LIQUIDE) 29 March 2002 (2002-03-29)

**2 INDEPENDENT CLAIM 1**

- 2.1 The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claim 1 is not new in the sense of Article 33(2) PCT. Document D1 discloses (see the claims, especially claim 10) a process consisting of two aerobic phases alternating with two anoxic phases, where nitrification and denitrification concur to treat water in a single reactor under different aeration levels that are associated with different treatment steps. The process treats biologically wastewater with a COD (see page 5 line 33 to page 6 line 4), therefore necessarily removing at least part of the BOD.

The first aerobic phase of the process of D1 is not distinguished from the first phase of the claimed method " preparing an environmentally adapted ... nitrification and denitrification" and the following anoxic-aerobic-anoxic treatment phase is not distinguishable from the second phase " treating a portion of water... not higher than said first level of aeration" because during the anoxic-aerobic-anoxic treatment phase nitrification and denitrification reaction will occur contemporarily at least at the beginning of the aeration.

Claim 1 is therefore not new.

**3 INDEPENDENT CLAIMS 20 AND 23**

- 3.1 The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claims 20 and 23 is not new in the sense of Article 33(2) PCT.

Document D1 discloses (see page 6 lines 8-26), an installation for treating water comprising a basin, an aerating system with porous diffusers, an oxygenating turbine, sensors for measuring oxygenation, ORP and pH, automating monitoring and control means. Claims 20 and 23 are therefore not new.

**4 DEPENDENT CLAIMS 2-19, 21, 22**

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Dependent claims 2 7-19, and 21, 22 do not contain any features which, in combination with the features of claim 1 and 20 to which they respectively refer, meet the requirements of the PCT in respect of novelty and/or inventive step (Article 33(2) and (3) PCT).

- 4.1 Dependent claims 3-6 are new because claim 3 states that the aeration level of the treating sequence is lower than the aeration level in the preceding aeration sequence, and claims 4-6 depend on it. These claims are considered inventive because they provide a way of treating water with comparatively less energy needs.